

**IN THE ABSTRACT:**

Please substitute the following Substitute Abstract for the originally filed Abstract:

Substitute Abstract

Methods for eliminating error in magnetic sensors used for measuring a coating thickness caused by static or changing external magnetic fields or temperature. The methods involve measuring an output of a magnetic sensor in a static or changing magnetic field or external temperature, storing the output, performing mathematical operations on the stored output, and correcting the output of the magnetic sensor to accurately indicate a coating thickness.